

35 USC 103 Rejections

In sections 4-5 of the Office Action, the Examiner rejects claims 1-22 and 24-37 under 35 USC 103(a) as being unpatentable over Yu (US Patent No. 5,869,873) in view of Dobkin (US Patent No. 4,153,909). The grounds for rejections are respectfully traversed.

The combination of Yu and Doblin does not disclose, suggest, or teach, *inter alia*, the following features recited by claim 1 of the present application:

“a first doping region having a first conductivity type, electrically floated on said well region”; and

“wherein said first doping area, when the electrostatic discharge current is greater than a predetermined current, reduces the potential difference between said node and said reference potential.”

At page 3 of the Office Action, the Examiner asserts that

“Regarding claims 1, 11, 17, and 34, Yu discloses, figure 5,... wherein said first doping area, when the electrostatic discharge current is greater than a predetermined current, reduces the potential difference between said node and said reference potential.”

The Applicant respectfully disagrees.

The ESD protection circuit disclosed by Yu is the same as the “conventional ESD protection circuit” as described at pages 1-2 of the present application. As explained on page 9, lines 3-35 and page 10, lines 1-21 of the present application, a conventional ESD protection circuit with an SCR has the first doping area 16 coupled to the node 10 (the same as that

shown in Fig. 5 of Yu). Such conventional ESD protection circuit has an I-V characteristic curve represented by the dotted lines shown in Fig. 3 of the present application. It is noted that, in the conventional ESD protection circuit, the potential difference between the node 10 and the reference potential  $V_{SS}$  keeps increasing when the electrostatic discharge current is greater than a predetermined current  $I1$ . Accordingly, since the first doping region in Yu is not electrically floated, it is **impossible** that the first doping region 52 coupled to the node 1 taught by Yu has the feature of "when the electrostatic discharge current is greater than a predetermined current, [reducing] the potential difference between the node 1 and the reference potential", as recited by claim 1 of the present application.

At page 3 of the Office Action, the Examiner further asserts that "Dobkin discloses in figure 12, a gated transistor 22 with floating node 36 to produce a gated SCR device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the first doping region in Yu's invention as a floating node in order to make a gated SCR device." The Applicant respectfully disagrees.

In Figure 12 of Dobkin, the symbol 36 represents a load resistor, not a floating node. The load resistor 36 is coupled between the emitter 13 and the source of positive potential  $V+$ . How can a load 36 be "electrically floated" when it is coupled to a positive potential  $V+?$

Moreover, Dobkin concerns adding an auxiliary collector between the emitter and the main collector for controlling the flow of injected current carriers to the main collector. Dobkin is hardly relevant to the ESD protection circuit disclosed in the present application. Why would a person

having ordinary skill in the art, with the goal of providing ESD protection, turn to Dobkin to find solutions? And What is the **motivation** of combining Yu and Dobkin?

Under MPEP 2143, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. With respect to the present application, the Applicant believes that none of the three criteria are met.

First, the combination of Yu and Dobkin does not teach all limitations of claim 1, as quoted above (for example, the first doping region being electrically floated and reducing the potential difference between said node and said reference potential).

Secondly, there is no motivation to combine Yu and Dobkin because Dobkin is not related to ESD protection. There is no suggestion in either Yu or Dobkin that these two references should be combined.

Thirdly, since there is no indication that either Yu or Dobkin **recognizes the problems** as identified at pages 1-2 of the present application, not to mention **finding the solution** for the problems, there is no reasonable expectation of success in combining these two references. The combination suggested by the Examiner would not have been **expected**

by those skilled in the art at the time of the filing of the invention of this application to be successful. The Examiner is able to combine Yu and Dobkin only because he has read the disclosure of the present application.

Due to the reasons stated above, the Applicant believes that claim 1 is patentable over the cited references. Claims 2-10 should also be patentable, at least by virtue of their dependency from claim 1.

Similarly, independent claim 11 recites, in part, "a first doping region having a first conductivity type, electrically floated on said collector region" and "wherein said first doping region, when said electrostatic discharge current is greater than a predetermined current, reduces the potential difference between said node and said reference potential." Independent claim 17 recites, in part, "a first doping region having a first conductivity type, electrically floated on said well region", "a second doping region having said second conductivity type, electrically floated on said base", and "wherein said first doping region, when said electrostatic discharge current is greater than a predetermined current, reduces the potential difference between said node and said reference potential." Independent claim 34 recites, in part, "a second doping region having a second conductivity type, electrically floated in said collector region", and "wherein said first doping region, when said electrostatic discharge current is greater than a predetermined current, reduces the potential difference between said node and said reference potential." These claims are patentable for the same reason as claim 1.

Claims 2-10, 12-16, 18-22, 24-33, and 35-37 are patentable, at least by virtue of their dependency from the above-mentioned independent claims.

The Applicants believe that all pending claims are in condition for allowance and reconsideration of this application is respectfully requested.

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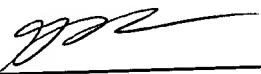
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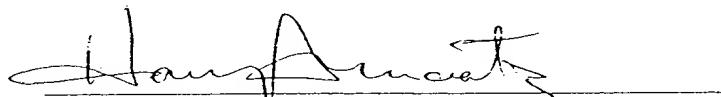
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